



# The book that shook

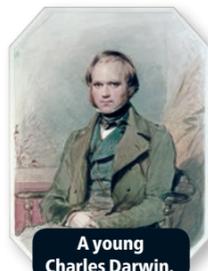
# the world

One of the most famous books in the history of science came out 160 years ago this week.

This week a very special book has its 160th anniversary. *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*, by Charles Darwin, may not be the most thrilling title, but it contains an idea that changed the way we think about the natural world. Published on 24 November 1859, *On the Origin of Species* says that living things are capable of changing their characteristics over time, to adapt to their environment. We call this idea evolution.

## Who was Charles Darwin?

Born in 1809 in Shrewsbury, Darwin's main interests as a boy were riding horses, hunting and shooting. He also enjoyed collecting all sorts of things, including insects and minerals. His teachers thought that he was wasting his time, but Darwin was developing an eye for detail. Being able to spot tiny differences in things would lead him to make one of the most exciting discoveries of all time. When he was 16, Darwin was sent to Edinburgh, to study to become a doctor. He hated it. Worse than just being bored, he was terrified of blood, and dissection (cutting up dead bodies to examine them) made him feel sick. So Darwin's father sent Charles to Cambridge University to train to be a vicar. While there, Darwin became interested in bug collecting and became one of the best "beetlers" in Cambridge.



A young Charles Darwin.

## Voyage of the Beagle

After Darwin finished training to be a vicar, he was invited to join a round-the-world voyage on HMS Beagle as a scientist. The voyage started in Plymouth and lasted for five years. In that time, Darwin visited countries including Argentina, Australia, Brazil, Chile, New Zealand, Peru, South Africa and Uruguay. When the Beagle returned in 1836, there were certain things that troubled Darwin. Why, for example, did islands with similar environments often have such different plants and animals?



A water opossum spotted by Darwin in Argentina.

## Down House

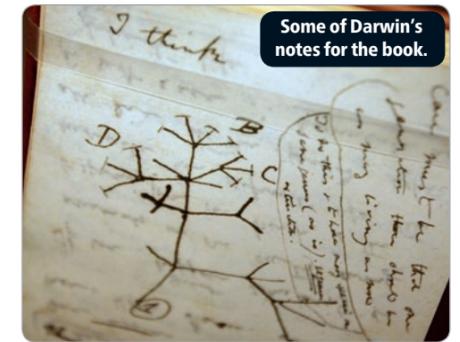
You could celebrate the 160th anniversary of *On the Origin of Species* by visiting Down House, in Kent. This is where Charles Darwin lived with his family for 40 years, and developed his ideas. You can stand in the study where he wrote the book, or stroll down the Sandwalk, where he walked every morning, fretting about how to make his theory work. There is also an interactive multimedia tour around the house, featuring Sir David Attenborough, which will help you discover how Darwin developed his ground-breaking theory.



See where Darwin wrote the book.

**SUPER STUDY**  
Darwin collected more than 5,000 different specimens on the Beagle voyage.

**WOW!**  
A first edition of *On the Origin of Species* in good condition is worth about £100,000 today.



Some of Darwin's notes for the book.

## Studying in secret

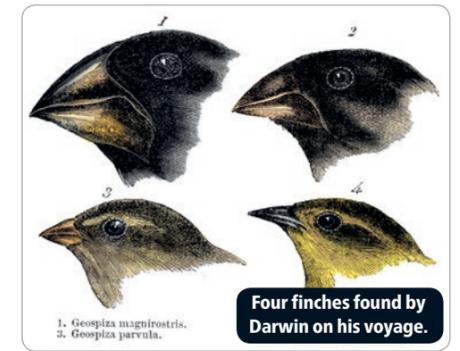
Darwin began to wonder if animals could adapt to their surroundings over time. He spent 23 years working out his ideas in private. Then, in 1858, Darwin found out that a British explorer named Alfred Russel Wallace was also writing about the idea of animals adapting. Darwin now had to move fast in case Wallace published a book on the subject first. *On the Origin of Species* came out just one year later in 1859 and the book sold out on the first day. The ideas it contained were praised by many scientists. Yet the book also offended some scientists and church leaders. They felt that his ideas clashed with their belief that the natural world was designed by God, rather than by natural processes.

## What did the book say?

*On the Origin of Species* says that species can change over time. Not all individual creatures are the same – within a species there are lots of differences. The animals that are best suited to their environment survive and produce young. For example, koalas have adapted to eat only eucalyptus leaves, which means they don't have to compete with other animals for food. However, creatures with variations that don't give them an advantage in their environment die out. Darwin called this natural selection. Given long enough, a group of living things can change so much that it becomes an entirely new species.

## Why is evolution important?

The theory of evolution explains why living things seem perfectly adapted to the environments they live in, and the theory has helped scientists use fossils to understand how living things are related to one another. Evolution by natural selection is the basis by which all living things are now studied.



Four finches found by Darwin on his voyage.